



SHAVINGS, SAWDUST and SPLINTERS

April 1995

from the president:

I have the same problem that every RMTC president has when beginning his term of office: how to improve the club and encourage attendance at the meetings.

Though attendance has continued to improve and the high level of enthusiasm for meetings is encouraging, I know that there must be things that we can do to make the meetings even more attractive to members.

What can we do to make the club better for you? If there's something about the club or the meetings that you aren't satisfied with, please take the time to let me know. I'll do what I can to correct any problems and make RMTC more attractive to you. And, if there's something about the meetings that you especially like, I'd appreciate hearing about that, too, so we can continue doing it. If it ain't broke, we won't fix it; but if it is broke, we have to know what needs fixing.

In the meantime, join us in Trinidad for the May Joint Meeting.

Steve Scruggs

in this issue:

- Screw Making
- Rocky Mountain patent:
The Glaskin Fencing Tool

Don't miss it!

Interim Joint Meeting

Trinidad, CO

May 6 & 7

Holiday Inn, Trinidad

Call (719-846-4491) for a room

Saturday: trading, socializing, dinner

Sunday: more trading, auction

No advance registration for meeting

- Books for Tool Collectors
- Our Newest Members
- Colorado Area Meeting News
- New Mexico Area Meetings News
- Meeting dates: 1995

from the editor:

Please note that included with this issue are additional pages of new members, late renewers, and address changes to add to your membership book.

One of those changes is a new phone number to reach me. You will still be able to reach me at the old number, but it will be appreciated if you make a note to consider this new number (987-3849) as my primary number for RMTC business.

We receive information periodically from Tillers International informing us of the schedule of their workshops. Their workshops cover such subjects as draft horse basics, ox driving, rope making, road building with animal power, etc. Also included in their schedule are subjects closer to tool collecting — tool sharpening, blacksmithing, timber framing, etc. Their workshops are held in Michigan. We will not devote space to listing their activities, but if you have an interest in these activities I can pass the information to you.

If you reside outside Colorado, New Mexico, or Wyoming: We do not normally mail notices of Colorado and New Mexico Area Meetings to members outside those states. If you are able to come to any of these please let us know and we'll get you a notice; remember, the dates and locations are in the membership book.

-Cliff Fales

**CLASSIFIED ADS**

Your membership in RMTC entitles you to free advertising space here for tools, tool parts, and tool related materials.

For Sale: Two wood flywheels from crusher mill (A) 6' 6" X 8" - \$100 (B) 5' X 6" - \$50 -- Rex Rideout: (303) 838-2838

Wanted: Nickel Silver - need a small scrap, about an inch square by .020" (but thickness not critical) -- Cliff Fales (303) 987-3849

A Letter From Rex:

I wanted to say that I was delighted to see Bill McDougall's article on the Sloane Stanley Museum. Mr. Sloane was the first source of this kind of information for me and many of his books have a place of honor in my library. Apart from the excellent books on tools and the way of life of our forefathers, he also wrote books on weather such as *"Look at the Sky and Tell the Weather."* These were a reflection on his career with the military as meteorologist. He was an accomplished artist as well, as his wonderful book, *"An Age of Barns"* will reveal. His books have been most helpful to me and I am pleased to see him recognized by this group. I was in Tesuque, N.M. recently and asked if there was any museum, etc. honoring him. Folks were not aware of it. Does anyone out there know of such a place in Tesuque?

Finally I wish to comment on the meeting held at the Red Rocks Community College. It was good to have a meeting at a working shop such as that. Well done, guys. But I was especially impressed with the presentation by Steve Smith on hand dovetails. He did an excellent job even with so many of us looking over his shoulder. But the most impressive part of it was the handout he had prepared. I have not often seen one so well prepared and thought out. I especially appreciate his article on the philosophy of hand tools. Thanks Steve.

- Rex Rideout

RMTC Publicity In American Woodworker Magazine!

The June 1995 issue of American Woodworker Magazine includes Rocky Mountain Tool Collectors in a listing of antique tool associations. We have already received some calls inquiring about membership. The listing is a sidebar accompanying two articles on cutting tongue and groove joints with wooden match planes and with Stanley Nos. 45, 48, 49, 146 & 147.

SHAVINGS, SAWDUST & SPLINTERS

Published by Rocky Mountain Tool Collectors — April, August, December.

Editor: Cliff Fales

1995 OFFICERS

President: Steve Scruggs

Vice Pres.: Chuck Paddock

Secretary: Cliff Fales

Treasurer: Grace Goss

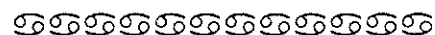
Board Members

1994: Don Jordan

1995: Scott Jordan

1996: Dennis Scheel

Send material for publication and address changes to Cliff Fales, 1435 South Urban Way, Lakewood, CO 80228

**Welcome, New Members!**

Michael Clary (Breckenridge, CO)

Allison Crutchfield (Boulder, CO)

John Estock (Denver, CO)

Fred Freimuth (Cheyenne, WY)

Jim Holtzclaw (Broomfield, CO)

Jeffrey Julian (Thornton, CO)

Chad Sagrillo (Louisville, CO)

Mike McCoy (Ft. Collins, CO)

Gene Palen (Cheyenne, WY)

Bob Parsons (Littleton, CO)

John Sperling (Lakewood, CO)

David Tanner (Bountiful, UT)

RMTC membership now totals 159!

March Colorado Area Meeting

by John Goss

Although March 19 started out windy, chilly and wet, the weather didn't seem to deter at least 70 members and their spouses and tools from attending what has become the annual Whitby tool bash. Sure hope we didn't overwhelm Phil and Layla! I doubt this the case as Layla and Phil seemed to have food and beverage and beverage and beverage for all! Bill McDougall came up from Albuquerque to this meeting to add to the confusion.

If you were unable to find the tool you were looking for it is unlikely you are going to find it for awhile. Aside from the large array of tools being offered at the gaming tables there were also the member auction and more tools from the Atkinson Estate.

A demonstration on making plane handles and knobs was aptly presented by the expert in this field, **Don Biays**. Don gave away, with minimum prodding, all his secrets. One tip which Don, hopefully, impressed upon us was being extremely careful when feeding small items into a router. It's obvious Don has a lot of respect for this tool - he has all his fingers! After seeing how accurately and critically Don plies his art, it is no wonder that Don is known through out the U.S. for his replacement handles and knobs. Thanks for an enlightening demo Don.

A display titled "Evolution of the Iron Circular Plane" was presented by Mister Faithful Displayer, **Don Jordon**. Don started with the Evans circular plane made from 1864 to 1871 threw in a Stanley No. 13 (1871 - 1909), a Victor No. 10 (1875 - 1885), a Stanley No. 113 (1877 - 1943), Bailey Level Co. Defiance model No. 9 (1880), Stanley Victor No. 20 (1880 - 1896), a Stanley No. 20 (1897 - 1958) and all was topped off by a No. 20, ca 1936, new in its original box. Good show, Don.

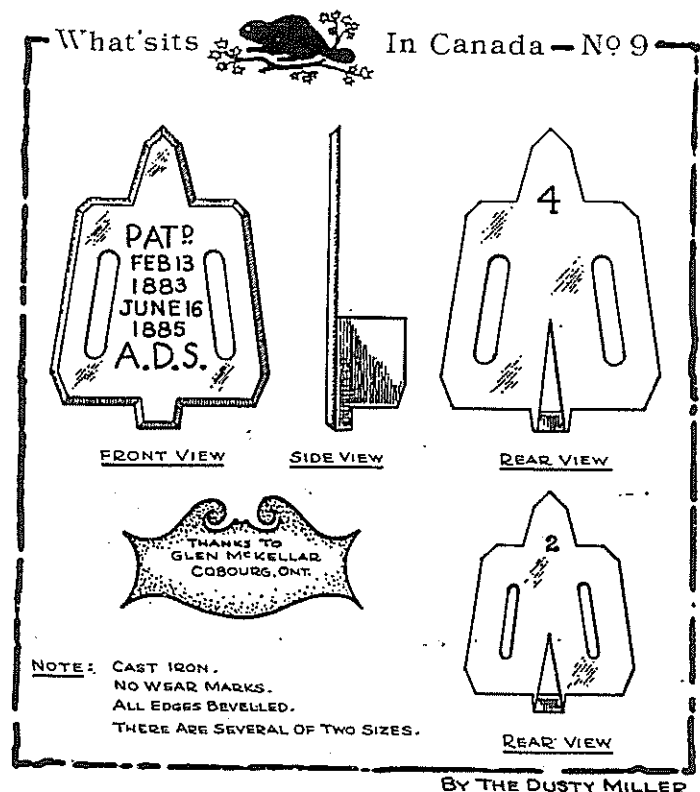
A unusual imprint for a Israel White plane and a special plywood tape measure, which I couldn't figure, with a 1937 patent number, were displayed by **Dick Dickerson**. Dick also has a much sought after coopers howell. The plane part is cast brass and stuffed with wood. Consensus is that the tool is continental. A collection of wood braces displayed with information, catalogs and books was shared by another Master Displayer, **Cliff Fales**. There was a J. Weiss all wood with two pads circa 1909 and a Siewers, Newport NY. Cliff would appreciate information on this one. (Editor's Note: Information has been received that Cliff was mis-reading the mark. It is actually Newport KY, across the river from Cincinnati and is the Siewers listed in Pollack and EAIA DAT. Siewers was the son-in-law of E. W. Carpenter of Lancaster, PA and the brace very closely resembles the Carpenter braces.) There was also a Moon of 145 St. Martin's Lane (London 1799 - 1827) and a Robert Marples of Sheffield with a patented ring chuck with the patent information from Reg Eaton's ultimatum Brace book.

Our resident expert on braces, **Bob Finch**, brought several interesting early examples of said tools. There was a beautifully hand forged and then hand filed to shape Scandinavian iron brace with a push button gate latch chuck and three hand forged, flat tanged, bits, an Armstrong patent of 1884 with a lever-cam which increases the holding (bite) power of the chuck jaws, a L.J. Parsons, patent No. 64666 of 1867, that uses a rotating disk on the chuck to hold the bits,

Stockbridge's patent No. 62262 of 1867, which has three tiny jaws pinned to the chuck shell and when tightened, the inner part of the jaw clamps the bit shank ahead of the tapered tang - got that? Bob also has a P. Naylor of New London, CN No. 66 brace. This iron brace has a push button lever catch chuck. Bob would like information on this one.

A display of Lufkin Rules by **Dave Miller** presented a No. 46 extra wide Caliper Rule used to measure wooden wagon wheel spokes, a No. 2051 1' and No. 2062 2' three fold rules with level bubbles and a 1' No. 42 shipwrights two leg bevel rule. He also had 1937 and 1955 Lufkin Catalogs to verify these rules.

Dennis Scheel had a L. Winslow Bung Reamer patented November 25, 1862 and Pearson claims less than five are known to exist. He also has a Coopers wantage/gauge rod combination rule made by Kirby and Brother of New York and seemingly given as advertisement by The Hydraulic Press Mfg. Co. of Mt. Gilead, OH. Dennis is impressed by the combination feature; however what part did the Hydraulic Press Co. play in the cooperage trade and when? **Don Biays** showed up with a selection of close to mint Stanley bench planes, No.s 2, 4, 4A, 5, 6, 6C Gage pat., all with the SW logo. Also in mint condition were two Stanley blued blade try squares, a No. 80 cabinet scraper and a Stanley 12" cherry wood level with the Stanley label and a M.L. Foss Hardware Supply of Denver label intact - be still my heart. Thanks all for participating and tootle-oo til next time!



What'sits in Canada courtesy of Dusty Miller and The Tool Group of Canada. Answer on page 6.

January Colorado Area Meeting

by John Goss

The weather - June in January - and the woodworking shop at Red Rocks Community College set the mood for the January meeting. Seeing all the old hand tools set out among the modern power tools surely reminded us where we had been and where we might be going. I wonder how long it will be til ear and eye protectors will be viewed with awe while being viewed among laser tools?

Dovetail Demo

This was also the perfect setting for **Steve Smith** of Loveland, to give his fantastic demonstration on hand dovetail cutting. Workbenches haven't changed a whole lot over the years and the one Steve chose to work on seemed to be quite vintage as it wobbled like many of us members; however, this didn't seem to deter Steve as he worked out some very nice dovetails. Steve had a beautifully crafted music stand that he made under better circumstances and it attested to his abilities. Excellent job Steve and thanks.

Thanks!

This meeting was hosted by **Chuck and Susan Paddock, Cliff Fales and Don Biays**. We want to thank Susan and the other ladies for keeping everything handy for us, while Chuck, Cliff, Don and the rest of us ate and shopped! Only kidding guys?

As usual there were plenty of tools to trade and much talk about said tools. There were also a members auction and more tools from the Atkinson Estate. We seem to be getting these auctions down pretty pat after about 20 years practice.

Gurley

I've saved the best for last - the displays. **Gail Parks** display was somewhat of a whatsit. It is a W&LE Gurley instrument which is some sort of protractor with a bubble level. This was not

identified. He also had a beautifully hand crafted hack saw with a fancy brass handle. The owner/maker? name was H. Jones.

Spiral Screwdrivers

Seems **Cliff Fales** name has become synonymous with unusual ratchet and spiral screwdrivers of late. Cliff has a Forest City Screwdriver Co., predecessor to North Brothers, spiral screwdriver patented by Z. T. Furbish of Augusta, Maine, on April 16, 1895 (patent #537,681). This is the earliest primary patent number seen on North Brothers screw drivers. Another unusual spiral driver patented by J. R. Doolittle of Jersey City, N.J., on April 6, 1886 (Pat. #339,277) is also in need of some information - like the name of the manufacturer would be nice. One more needs manufacturer information. This is the Bullock Manufacturing Associates of Springfield Ma., spiral screw driver patented on June 8, 1909 by W.A. Peck and assigned patent #924,372. If you have any information on these tools or manufacturers Cliff would appreciate your sharing with him.

Block Planes

John Gilmore arrived with one of his famous portable tool display boxes. This case contained a whole lot of block planes which included a Stanley #130, #95, Record 043 to mention a few. He also had a 6" squirrel tail block plane with Roger Smiths recent information identifying these as manufactured by the Washburn Co. of Chicago, Cassidy - Fairbank Div... I believe they made three sizes -3", 6" and 8". I can be sure you will let me know if I'm wrong.

Kimberly, Marples & Davis

Brian Hopple shared some of the tools he had acquired on a recent trip East. The first being a D. Kimberly,

Birmingham Eng., patented plow. This company dates back to 1854 and continued to 1908 as Kimberley when it was taken over by Wynn and Timmins & Co.. It later became Highgate Tool Co.. He has a Marples and Sons wedge arm plow with a New Zealand Military mark. I would think the rarity of this mark is remarkable, however, dating it to the 1940's and being a wedge arm plow seems to me this type plow would have been quite archaic. The mark is an upward pointing arrow with three (three leaf) clover leaves below the arrow. There's more! Upstaging the plows is a 12" Davis Level and Tool Co. filigree cast inclinometer level with gold leafing and its in the original box. I am told this type is the elderly variety. A Cheney nail holding hammer with the original handle and a faded label was also presented by Brian. This hammer was patented, #66298, on July 6, 1867 by Henry Cheney of Little Falls, N.Y. Maybe someone out there can tell us who manufactured it and for how long.

Treadle Power

Steve Butti shared his collection, three at this point in time, treadle powered scroll saws. Steve has done a fine job of rehabilitating these tools and all are in operating order.

Stanley, Keen Kutter & Nielson

Eight Stanley block planes in their original boxes were displayed by **Dave Miller**. Included were a #110, #220, #65, #91, Victor #1120 and a #OH20 two tone. A Stanley #141 nickel plated bull nose plow plane and a Bailey #14 were included in a display by **Don Biays**. Don also had a Keen Kutter grass shear and Lie Nielson's beautiful replica of a Stanley #212. A Stanley #0 (I think) 30" level of SW vintage and marked "IMPERFECT" was shared by **Ed Rowland**. This level is in a lot better condition than most I've seen. Thanks all for making the effort to share these tools with us. By the way this was a Saturday meeting - Bob Finch attended on Sunday and later informed me he was quite lonely and couldn't buy, trade or sell anything.

Tools of the Rocky Mountain Region

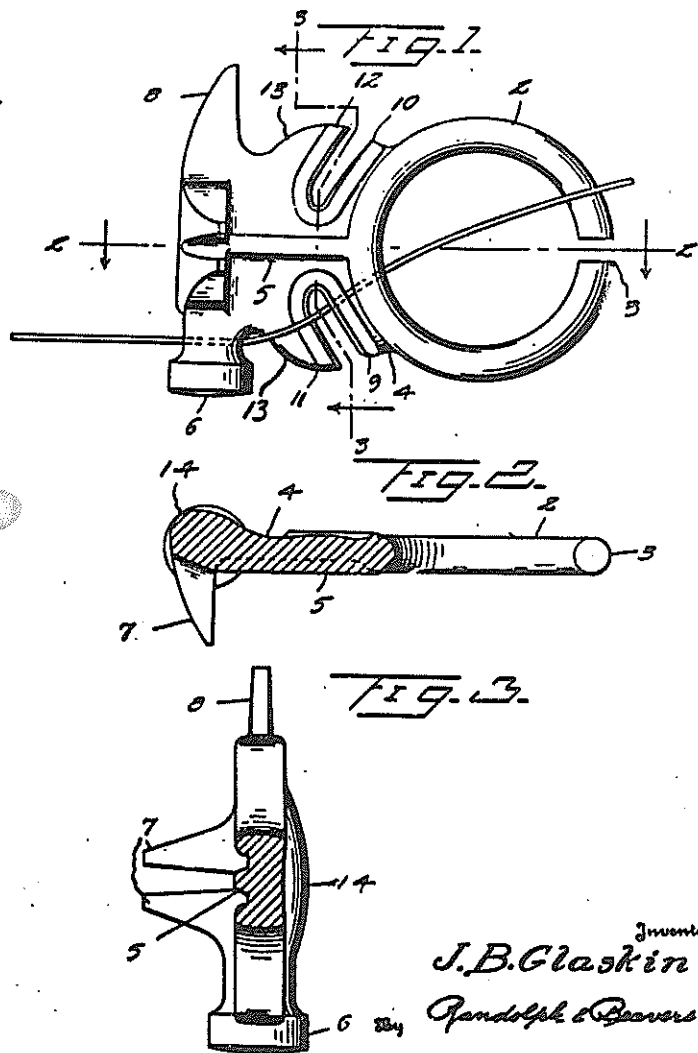
Sept. 27, 1949.

J. B. GLASKIN

2,483,193

FENCE WIRE ASSEMBLING AND STRETCHING TOOL

Filed March 14, 1945



Inventor
J.B. Glaskin
Randolph C. Beavers
Attorney

FENCE WIRE ASSEMBLING AND STRETCHING TOOL: patented on September 27, 1949 by James B. Glaskin of Colorado Springs, Colorado. These are commonly marked: "ATOMIC". Some of the claims made in the patent for this tool are hammering, pulling nails, straightening bent staples and stretching wire; some of these operations require the insertion of a handle through the ring. Apparently information about catalog listings, marketing information and distribution is not available.

-Submitted by John Gilmore

DECEMBER NEW MEXICO AREA MEETING

by Bill McDougall

Our December 10th meeting at McDougall's used tool warehouse was attended by 13 members and five visitors, including Bill Muse, a former member. Bill, a baker par excellence, brought a delicious maple praline pie and also volunteered to host our August 12th meeting. Let's hear it for Bill!

Drew Goodmann arranged for a great talk and demonstration on the wheelwright's craft by Steve Reber and Harry Touloumis of Corrales, NM. Their very invigorating hobby is building and repairing wagon wheels and repairing wagons. Harry also raises and trains draft horses. If any of us acquire a pair of these huge beasts in a tool trade, we know whom to ask about their care and feeding.

After some tool trading and a mind boggling Whatsit? session, we drafted volunteers to host our six local meetings for 1995. Bill McDougall gave a report on plans for our 1996 Labor Day meeting in Albuquerque. This will be our fifth joint meeting with the Southwest Tool Collectors and might also be a joint meeting with the P.A.S.T. tool collectors. At any rate quite a few of them usually come to this one.

The meeting will be once again at the Ramada Classic Hotel, but we don't yet know what it's going to cost us. The Hotel is beginning a giant refurbishing effort and will spend megabucks. This will of course increase our cost, but we won't know how much until later this year. So far it's definite that they will no longer accept food stamps at the banquet, and they will allow no more than nine occupants per room. Oh well, life goes on.

CREDIT WHERE CREDIT IS DUE

The March/April issue of PIECEWORK Magazine (needlework arts) contains a column titled Legacy (Question and Answer) with questions about rare and unusual scissors; Grace Goss is the authority providing the answers about the Florian roller cutter pinker and the Florian pocket folding scissors. The article was accompanied with color photographs of these two examples from Grace's collection. Grace will also be presenting a session on scissors at the April Southwest Tool Collectors meeting in Tulsa.

BUTTON, BUTTON WHOSE GOT THE BUTTON?

Buttons are made from many materials from cotton to precious stones. Brass buttons were first noticed on dresses in the tenth century. Metallic buttons were being manufactured in England in 1670. By 1689, Birmingham employed over 4,981 persons in this button making industry.

-Submitted by Grace Goss

The Collector's Bookshelf

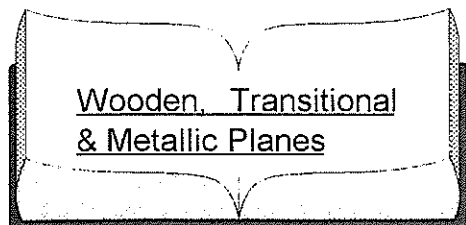
by John Goss

We have many 'new' members and felt it would be helpful to occasionally list some of the printed material that has made the rest of us such knowledgeable 'tool gurus'. This column is not intended as a review, just to make you aware of the information that is available. You may find some of the listed publications available for purchase from RMTG members; however, complete listings are available from:

The Astragal Press
5 Cold Hill Rd., Suite 12
PO Box 239
Mendham, NJ 07945-0239

EAIA
(Early American Industries Association.)*
c/o John S. Watson, Tres.
PO Box 2128 E.S.P. Station
Albany, NY 12220

You must be a member to purchase books from the EAIA. However, they offer most titles at substantial savings, which includes shipping. Another benefit is the EAIA library loans out-of-print works and catalogs for a \$3.00 shipping fee. Well worth the \$25.00 membership fee.



PATENTED TRANSITIONAL & METALLIC PLANES IN AMERICA: Vols. I & II: Roger K. Smith
P-TAMPIA is the most complete book on this subject. When one needs to identify a plane or needs information about the maker or patent this is the one! Price reflects the quality of content and the photographs are almost as good as having the tool in hand. Vol. I: \$55.00, Vol. II: \$88.00/EAIA member \$80.00.

THE STANLEY PLANE: Alvin Sellens

Sellens book was Smith's inspiration for the much needed P-TAMPIA. The Stanley Plane, aside the history of Stanley, contains a detailed description of essentially every plane made by Stanley, known at the time.

THE WOODEN PLANE: John M. Whelan

This is NOW the definitive works on the wooden plane. If you're wondering what to call it, this book will very likely name it, and tell its use. Hard cover - \$37.50

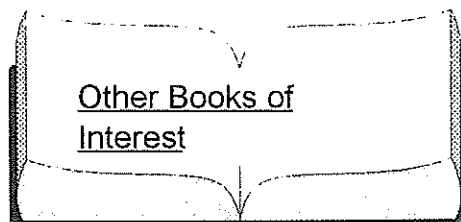
BRITISH PLANEMAKERS FROM 1700: W. L. Goodman - 3rd edition
Revised by Jane and Mark Rees \$39.50
Covers the British planemaking trade history and lists British makers and their marks. Also covers the working history of many of the planemakers.

THE AMERICAN CABINETMAKERS'S PLOW PLANE: John A. Moody
\$34.50/EAIA \$28.00

The only reference available devoted solely to the plow plane.

WOODEN PLANES IN 19TH CENTURY AMERICA, VOL. II: Kenneth D. Roberts (Available from author)

A pretty complete planemaking history of the Chapins Union Factory, 1826-1929. Lots of illustrations of trade catalogs, products and the plant.



A PLACE TO LIVE AND WORK: Harry C. Wilcox \$35.00/EAIA \$29.79
The story of Henry Disston's saw manufacturing company the the factory town he built.

DICTIONARY OF AMERICAN HAND TOOLS: Alvin Sellens

This reference work lists, pictures and describes nearly every variety of hand tool produced to 1941.

AXE MAKERS OF NORTH AMERICA: Allan Klenman

Describes and helps identify, by their marks, major axe makers of the U.S. and Canada.

AMERICA'S ICEMEN: Joseph C. Jones

An extensive, excellent, illustrative history of the natural ice industry, 1665-1925.

THE COOPER AND HIS TRADE: Kenneth Kilby

A description of cooper's materials, tools, techniques, and products by an experienced cooper.

MEMORIES OF A SHEFFIELD TOOL MAKER: Ashley Isles

A wonderful autobiography of an Sheffield tool maker and a account of the Sheffield hand trades in their final years.



WHAT'SITS IN CANADA #9 - ANSWER -

Canvas Stretcher Frame Keys: The fact that patent date (without number) is imprinted means that this is not truly a "what'sit." It takes time and patience, but patented devices almost always are identifiable. However, this sure was a puzzle until Harold Rodger eventually tracked it down as U.S. patent #272162 assigned to an Aaron D. Shadduck for an improved way for artists to stretch canvas on a frame.

Courtesy of Dusty Miller and THE TOOL GROUP OF CANADA.

INVITATION FROM LOVELAND MUSEUM/ GALLERY

The Loveland Museum/Gallery has extended an invitation to RMTC members to participate in the annual Cherry Pie Celebration. The event is hosted by "Friends of the Museum" and is held to commemorate Loveland's agricultural history and foundation. The event is also aimed towards expanding the Museum audience for exhibits, events and programs. Traffic on 5th St., on the South side of the Museum will be blocked off and exhibits and Cherry Pie tasting, contests and a band, The Innocence, will entertain during this event. The festivities will be held at Peters Park, at the front of the Museum, on July 8, 1995 from 11 AM to 2 PM. If you would like to participate with a display or craft demonstration, to help promote RMTC, please contact John Goss. Denver toll free dial 541-1000, #, 23468-962-9943 (the commas in the preceeding sequence denote places you will hear a message). This is a family oriented event and hands on exhibits would be fun! I am told the attendance is usually around 300. I also do not recommend sales at this affair.



Trinidad May 6 & 7



FEBRUARY NEW MEXICO AREA MEETING

by Bill McDougall

Our February meeting was once again in Bernalillo at the home of Joe Liebert who served us another batch of his famous five alarm posole.

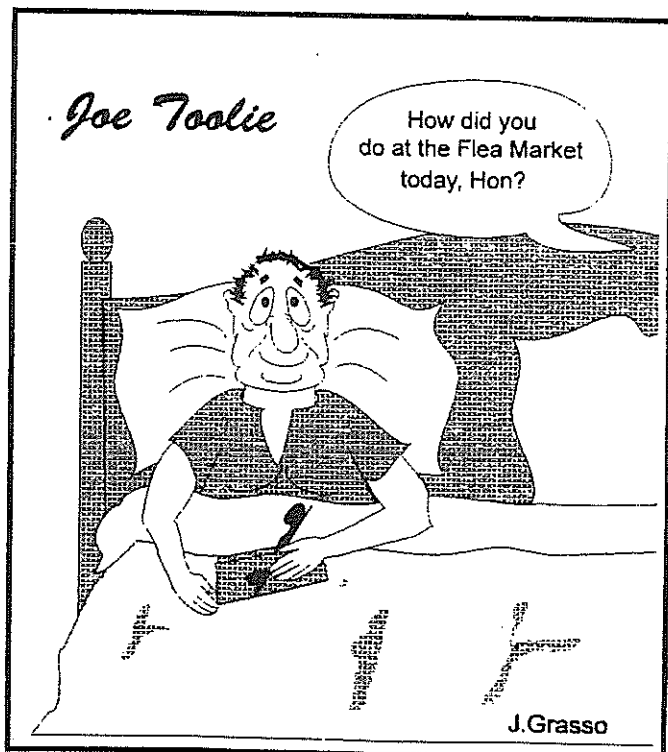
Dave Fessler gave an interesting report on the recent meeting of the P.A.S.T. (Preserving Arts and Skills of the Trades, formerly Early American Industries, West.) meeting in San Diego. Several of us are members, and Dave Fessler, Dan Woodford, Ernie Blumenthal and Bill McDougall attended this meeting. Once again Roger Phillips and his wife Eleanor held open house in their beautiful home overlooking a large chunk of the Pacific Ocean and Mexican Channel Islands. Roger has probably thrown away better tools than some of my real keepers. So it is always a humbling experience to see the small part of his collection at this home.

Joe Liebert, who is a retired shop and woodworking instructor, gave us a very interesting and informative talk on the wood lathe, and some of us who already know everything even learned something.

My main impression of the lathe is that it is great for throwing improperly held chisels out through the roof of the workshop.

This meeting was attended by 14 members including Elmo Rinehart who rejoined RMTC. Welcome back, Elmo!

Our next local meeting will be held at the home of Mike Stark who has promised us a very interesting talk and demonstration.



Courtesy of Joe Grasso & The Workbench of The Long Island Antique Tool Collectors Association.

WOOD SCREWS

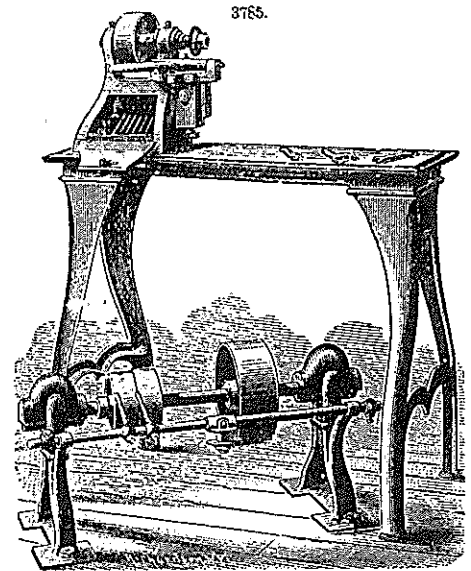
BY THE LATE W. C. AITKEN (Birmingham).

It will be readily understood that the trade term "wood screws" simply means iron screws used by carpenters and cabinet makers, varying in length and thickness from one quarter of an inch upwards, which offer ready method of uniting separate pieces of wood, and attaching metal work to it. Screws, as everybody knows, are much more difficult to withdraw than nails, which from their tapering form, can easily be removed by a pair of pincers, while a well-made screw can only be removed through the same means by which it was introduced into the wood. Screws are distinguished by their lengths, and their thickness by numbers, viz. an inch screw may be had from 1/8 up to 1/4. The form of the head is usually distinguished as "countersunk," but there are other varieties, such as those with heads that are convex and stand in relief as half spheres (lockscrews), while in others the heads are "bullet," like in form to those used by medieval metal makers.

The crude machinery or processes produced rough and badly cut threads or "worms," which tore the fibres of the

wood as they entered it, defeating to a very great extent the advantage of the worm. The bluntness of the point is also a disadvantage; but recent improvements in cutting, by which the bottom of the "thread" has been made flat instead of concave, and the points, "gimlet" like, permit of a smaller hole being perforated in the wood for the introduction of the screw, so that its smooth and well-cut thread does not destroy the fibre into which it is driven, and practically becomes a "nut." The perfection with which screws are now made has very largely increased the manufacture.

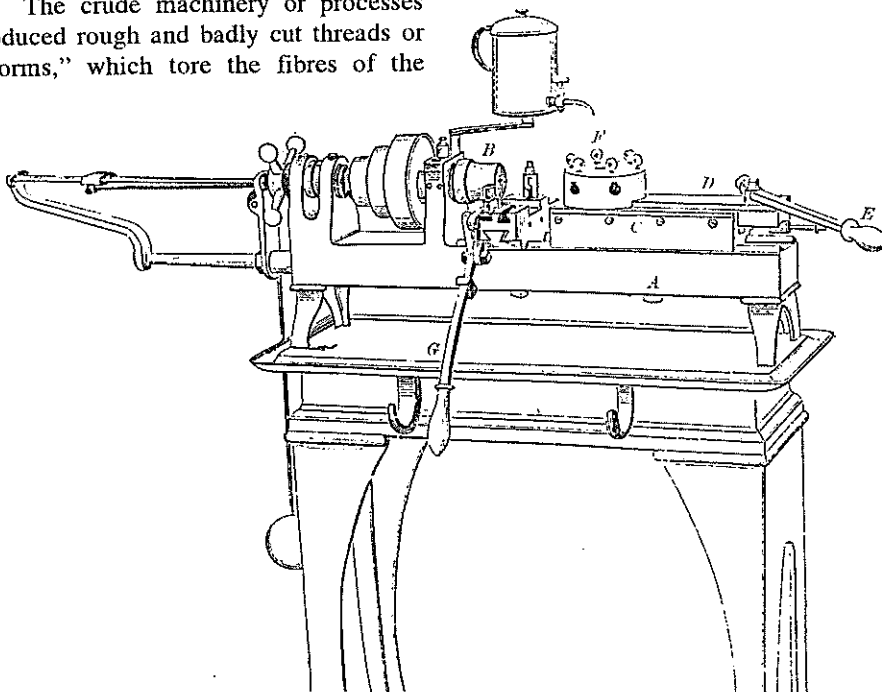
The early history of wood screws is involved in some little doubt. They were prior to 1760 entirely made by hand, but in that year the brothers Wyatt invented an apparatus for cutting them, which to a certain extent was automatic. The "blank" out of which the screw was to be produced was held by clams, which revolved in a power-driven lathe, and at the back of the spindle in which the



Screw-slotting machine
(Brown & Sharpe - Appleton's Cyclopaedia)

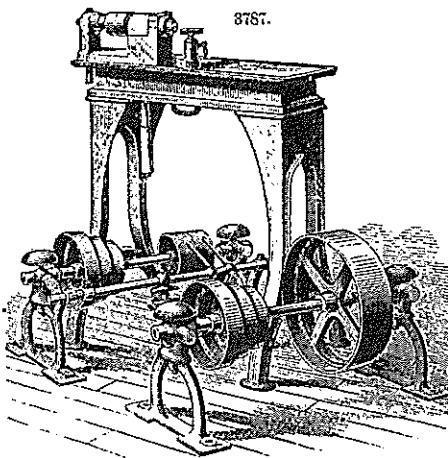
clams were fixed, a screw arrangement repeatedly forced the blank forward through tools which cut the thread. The nicking of the head was also effected by revolving cutters, the blank, held in dies, being forced through these by means of a screw; and means were also provided for stopping and putting the machinery in motion. A curious illustration of the rate of production of screws by this machine, as well as the importance of the trade previous to 1798, will be gathered from the fact that Messrs. Shorthouse, Wood, and Co. (the then largest producers of screws), who had works at Burton-on-Trent, Tetterhall, and Hartshorne in Derbyshire, at the latter establishment with fifty-nine pairs of hands turned out 1200 gross weekly, which is under the 120th part of the production of one manufacturing firm in Birmingham alone.

All screw blanks were up to 1817 forged, but in that year Colbert, a German clock maker, devised a means for avoiding this, and forming the blanks from iron wire, so that apart from increased rapidity of production, the



Screw-making machine manufactured by Messrs. Brown & Sharpe of Providence, R.I. (from Appleton's Cyclopaedia of Applied Mechanics, New York, 1880)

process gone through in converting iron into wire improved the metal out of which the blanks are made. By Colbert's process the wire was cut into lengths a little longer than the screw to be made, held in a pair of dies with a countersunk impression on their face, so that the wire protruding beyond the dies was "upset" by means of a hammer expanded laterally, and took the form sunk in the die. All screw blanks are now made from zinc, and Colbert's method has been improved upon. The wire is now simply



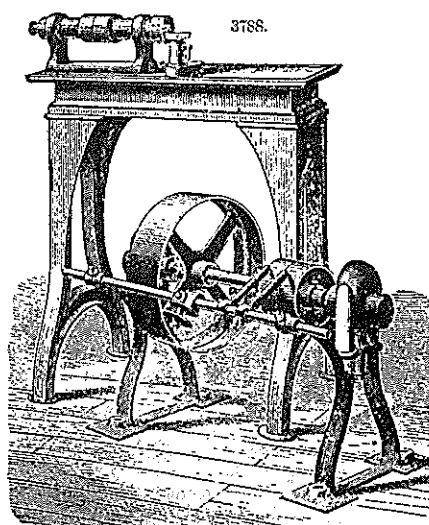
Screw-finishing machine
(Brown & Sharpe - Apple-
ton's Cyclopaedia)

supplied to the heading machine, into which it is drawn, and cut off to length, while the head is formed by a similar process to that described in solid headed pin making, the inventor of which, Mr. Wright, also brought out a screw-making machine, though from its complicated construction it never came into any extensive use, and has long been abandoned. Inventive skill has been largely exercised in this country and America in perfecting the machines, and those now in use here are American and self-acting. The attendance of women in the former dirty occupation of "screw grinding," as it was called, is entirely got rid of, and they are now employed in tending the machines, a number of which can be managed by one female.

The old process of screw making by hand consisted in cutting the rod into lengths, heating it, placing it in a countersunk bolster, and opening the head by hammering. The nick or slot on the head was cut with a hand-saw, and

the worm of the screw, by placing the blank in clams at the end of a spindle, to the opposite end of which a winch handle was attached. The spindle, placed on two bearers, was made to revolve by manual power communicated to the winch handle. The dies which cut the threads were in two parts, the lower one fast and the upper loose, and connected with it was a lever with a weight attached, which, pressing upon the blank in its passage backwards and forwards through the dies, cut the thread. A treadle operating on the lever increased or diminished its pressure, till the worm was completed.

The present method is as follows: - The blanks, formed of wire as already described, are carried to the machine and placed in its hopper, whence by a mechanical arrangement they are withdrawn, one by one, and placed in the machine where the head is turned. They are then nicked, while held in grips by rotating saws, the burr arising from which is removed by again subjecting the blank head to the action of the turning tool; one complete revolution of the tool is sufficient to accomplish these two operations, and the blank is dropped down into a receiver. The headed and slit blanks are now placed in the hopper of the worming machine, and then taken to the clams; a cutter is next passed along the blank often enough to produce the thread of the required depth, and to form the point, and the screw is then released



Screw-polishing machine
(Brown & Sharpe - Apple-
ton's Cyclopaedia)

and falls into a receptacle provided for it. As these machines are self-acting, one woman can attend to a number of them, whereas of the preceding machines (on the interregnum system), one woman was required for each. Now, however, the supply of blanks to the hoppers and attention to the change of cutters (when they become worn) is all that is required.

Wood screws have also been produced by being cast in sand, and ingenious methods have been devised to simplify the perforation of the moulds, as regards the removal of the patterns; but it must be evident that any attempt to produce wood screws by sand casting, as beautifully clear in the worm or thread, as in the ordinary metal wood screw, must result in failure, whether as regards quality, utility, or price: metal when cast, whether iron, brass, or copper, is brittle in comparison with any of these metals, when they have undergone the processes of rolling and conversion into wire, from which all wood screws are made. Cast wood screws should be regarded simply as among the curiosities of manufacture.

Improvements in the manufacture of wood screws, with concurrent diminution in price, has led to their use in preference to nails. The computed number of screws made in England in 1849 was 70,000 gross per week. In 1866, this production had risen to 130,000 gross, and the quantity of wire consumed annually for this manufacture alone amounted to upwards of 5000 tons. In the year (1873) one manufacturing screw firm (Messrs. Nettlefold and Chamberlain) produced 150,000 gross weekly, or in the aggregate, allowing for stoppages, &c., forty-eight working weeks to the year, seven millions two hundred thousand gross of screws per annum. Birmingham is the chief seat of the wood screw manufacture, and they have not recently been produced to any extent elsewhere. The aggregate number made in England annually is at present estimated at 9,000,000 of grosses - or 1,296,000,000 wood screws. The iron wire consumed is nine thousand tons, though a small deduction should be made for screws from copper and brass wire.

Reprinted from *BRITISH MANUFACTURING INDUSTRIES*. G. Phillips Bevan, Editor, London, 1878

- Submitted by John Goss